

9

comparing the touch gesture similarity value with a first threshold value; and

comparing the non-touch similarity value with a second threshold value.

3. The method of claim 2, further comprising setting the first and second threshold values to different values based on gesture type.

4. The method of claim 1, wherein a first portion of the image data is received from a touch-based gesture detection system, and a second portion of the image data is received from a non-touch based gesture detection system.

5. The method of claim 4, wherein processing the image data includes using the first portion of the image data from the touch-based gesture detection system to detect a non-touch gesture.

6. The method of claim 1, further comprising determining a differential similarity value, and comparing the differential similarity value with a difference between the touch gesture similarity value and the non-touch gesture similarity value.

7. The method of claim 1, further comprising:

using contextual information to select between a touch and non-touch gesture when processing the touch gesture similarity value and the non-touch gesture similarity value.

8. The method of claim 7, wherein the contextual information includes information identifying a previously-identified gesture.

9. The method of claim 7, wherein the contextual information includes information identifying a command set of an application.

10. One or more computer-readable media, storing computer-executable instructions that, when executed, cause a computer to at least:

receive image data corresponding to a user's gesture; process the image data to generate a touch gesture similarity value that defines similarity of the user's gesture to one or more touch gestures and a non-touch gesture similarity value that defines similarity of the user's gesture to one or more non-touch gestures;

process the touch gesture similarity value and the non-touch gesture similarity value to identify the user's gesture, resulting in an identified gesture; and generate an output in response of the identified gesture.

11. The one or more computer-readable media of claim 10, wherein processing the touch gesture similarity value and the non-touch gesture similarity value includes:

comparing the touch gesture similarity value with a first threshold value; and

comparing the non-touch gesture similarity value with a second threshold value.

12. The one or more computer-readable media of claim 11, wherein the first and second threshold values differ based on different gesture types.

13. The one or more computer-readable media of claim 10, wherein a first portion of the image data is received from a touch-based gesture detection system, and a second portion of the image data is received from a non-touch based gesture detection system.

14. The one or more computer-readable media of claim 13, further storing computer-executable instructions that, when executed, cause the computer to: use the first portion of the image data from the touch-based gesture detection system to detect a non-touch gesture.

15. The one or more computer-readable media of claim 10, further storing computer-executable instructions that, when executed, cause the computer to compare a differential simi-

10

larity value with a difference between the touch gesture similarity value and the non-touch gesture similarity value.

16. The one or more computer-readable media of claim 10, further storing computer-executable instructions that, when executed, cause the computer to:

use contextual information to select between a touch gesture and a non-touch gesture.

17. The one or more computer-readable media of claim 16, wherein the contextual information includes information identifying a previously-identified gesture.

18. The one or more computer-readable media of claim 16, wherein the contextual information includes information identifying a command set of an application.

19. An apparatus, comprising:

one or more processors; and

memory storing computer-executable instructions that, with the processor, cause the apparatus to at least:

receive image data corresponding to a user's gesture;

process the image data to generate a touch gesture similarity value that defines similarity of the user's gesture to one or more touch gestures and a non-touch gesture similarity value that defines similarity of the user's gesture to one or more non-touch gestures;

process the touch gesture similarity value and the non-touch gesture similarity value to identify the user's gesture, resulting in an identified gesture; and generate an output in response to the identified gesture.

20. The apparatus of claim 19, wherein processing the touch gesture similarity value and the non-touch gesture similarity value includes:

comparing the touch gesture similarity value with a first threshold value; and

comparing the non-touch similarity value with a second threshold value.

21. The apparatus of claim 20, wherein the first and second threshold values differ based on different gesture types.

22. The apparatus of claim 19, wherein a first portion of the image data is received from a touch-based gesture detection system, and a second portion of the image data is received from a non-touch based gesture detection system.

23. The apparatus of claim 19, wherein the memory further stores computer-executable instructions that, with the processor, cause the apparatus to use the first portion of the image data from a touch-based gesture detection system to detect a non-touch gesture.

24. The apparatus of claim 19, wherein the memory further stores computer-executable instructions that, with the processor, cause the apparatus to compare a differential similarity value with a difference between the touch gesture and non-touch gesture similarity values.

25. The apparatus of claim 19, wherein the memory further stores computer-executable instructions that, with the processor, cause the apparatus to use contextual information to select between a touch gesture and a non-touch gesture.

26. The apparatus of claim 25, wherein the contextual information includes information identifying a previously-identified gesture.

27. The apparatus of claim 25, wherein the contextual information includes information identifying a command set of an application.

28. The apparatus of claim 19, further comprising an infrared camera and a plurality of infrared light sources positioned below a screen, wherein the infrared camera is configured to supply at least a portion of the image data.